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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,792	08/30/2000	Hongbin Ji	Ji 4-1-26	2079

32498 7590 06/26/2006

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EXAMINER	
PHILPOTT, JUSTIN M	
ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 06/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/651,792	JI ET AL.
	Examiner	Art Unit
	Justin M. Philpott	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-79* is/are pending in the application.

4a) Of the above claim(s) *14-38 and 53-79* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 39-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 8, 2006 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 39 have been considered but are moot in view of the new ground(s) of rejection. Specifically, the newly recited limitation in claims 1 and 39 is taught by the newly cited art of Soumiya et al. as discussed in the following office action. It is further noted herein that this newly recited limitation is also disclosed in several other U.S. patents cited in the Conclusion section of the following office action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-12, 39-50 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,982,748 to Yin et al. in view of U.S. Patent Application Publication No. US 2001/0026553 A1 by Gallant et al., further in view of U.S. Patent No. 5,696,794 to Soumiya et al.

Regarding claim 1, Yin teaches a method for controlling call admission to a communication system (e.g., see abstract) comprising: assigning a respective overbooking factor (e.g., allocation factor, f(i), see col. 7, lines 18-60) to each of a plurality of service classes (e.g., i classes, see also Table 4 – Service Classes) such that each service class is assigned a different overbooking factor (e.g., see col. 6, lines 43-60 as well as col. 7, lines 18-45; col. 8, lines 14-20; col. 8, lines 42-50; col. 9, lines 31-40; col. 10, lines 38-42; and col. 11, lines 4-9); determining an effective bandwidth (e.g., A(i)) for each class based in part on the respective assigned overbooking factor (e.g., see col. 7, lines 30-34 regarding A(i) determined by f(i), and see col. 11, lines 6-7 regarding configuring f(i)); determining a value of a free bandwidth in the communication system based in part on the determined effective bandwidth for each service class (e.g., see col. 6, lines 36-50 regarding determining total bandwidth B(i) available for each service class and subscribed bandwidth A(i) for each service class, and see col. 5, lines 61-66 and step 60 of FIG. 3 regarding determining available resources for the service class based on the total resources available, B(i), and the resources already assigned, A(i)); and admitting or rejecting the call based on the determined value for the free bandwidth (e.g., see col. 3, lines 20-35, and also col. 6, lines 8-9).

Also, regarding claim 39, Yin teaches the method discussed above regarding claim 1, and further, teaches an apparatus for performing the method, comprising: a programmed processor

(e.g., Connection Admission Controller 10, see FIG. 1) coupled to a multiplexer/demultiplexer (e.g., selector 28, see col. 4, line 29 – col. 5, line 7) comprised in an access terminal of the communications system (e.g., see col. 4, lines 29-34 regarding the device comprising a node, router, switch, or other network device directing various data flows across a port).

Additionally, regarding claims 1 and 39, Yin also teaches each service class may have a different traffic rate, which corresponds to different traffic parameters determining A(i) for each service class (e.g., see col. 6, lines 47-48; col. 7, lines 25-30; col. 8, lines 16-17) thus teaching each service class may be assigned a different overbooking factor; and further, Yin teaches that the overbooking factor (allocation factor, f(i)) for each class may be configured to a specific value by the network administrator in order to have a default value (col. 11, lines 6-9) which may be unique from overbooking factors in other classes (e.g., Yin specifically indicates f(1) may preferably be assigned 1.0 (col. 8, line 48); f(2) may preferably be assigned 1.2 (col. 8, lines 65-66); and/or either of f(3) or f(4) may be preferably assigned 0.8 (col. 11, lines 8-9 regarding f(i)).

However, regarding claims 1 and 39, Yin may not specifically disclose requiring each class to be assigned a unique overbooking factor to ensure no two service classes have an identical overbooking factor. However, Gallant also teaches methods for bandwidth allocation and, specifically, teaches each of a plurality of classes (class of service COS, see paragraph 0142) are assigned a unique overbooking factor (e.g., overbooking factor specific with respect to each COS, see paragraph 0154), thereby ensuring no two service classes have an identical overbooking factor (e.g., see paragraphs 0154-0166). Further, the teachings of Gallant provides improved means for guaranteeing quality of services for customers while maximizing network bandwidth usage (e.g., see paragraphs 0002-0019). Thus, at the time of the invention it would

have been obvious to one of ordinary skill in the art to apply the teachings of Gallant to that of Yin in order to provide improved means for guaranteeing quality of services for customers while maximizing network bandwidth usage.

Additionally, regarding claims 1 and 39, Yin in view of Gallant may not specifically disclose the effective bandwidth is also determined in part on one of either a cell delay variation or cell loss ratio. However, Soumiya also teaches a method for controlling call admission (e.g., see Soumiya at abstract), and further, specifically teaches an effective bandwidth (e.g., inhibited bandwidth) is determined for each of a plurality of quality classes based in part on a cell loss ratio (e.g., see col. 9, lines 56-61 regarding "inhibiting a bandwidth beyond the bandwidth in conformity with cell loss ratio which is specified for each quality class"). Additionally, the teachings of Soumiya provide enhanced usage of each output link (e.g., see Soumiya at col. 8, line 63 – col. 9, line 3 regarding "the utilization of an output link is enhanced") along with enabling an allocation of bandwidth for each input link (e.g., see Soumiya at col. 9, lines 3-5 regarding "desirably allocate a bandwidth for each input") (see also, generally, Soumiya at col. 8, line 63 – col. 10, line 50), which prior to Soumiya was not possible in a single system (e.g., see Soumiya at col. 8, line 63 – col. 9, line 10). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the call admission control teachings of Soumiya to the call admission control method of Yin in view of Gallant in order to provide a call admission control method that has both advantages of enhanced usage of each output link (e.g., see Soumiya at col. 8, line 63 – col. 9, line 3 regarding "the utilization of an output link is enhanced") along with enabling an allocation of bandwidth for each input link (e.g., see Soumiya

at col. 9, lines 3-5 regarding "desirably allocate a bandwidth for each input") (see also, generally, Soumiya at col. 8, line 63 – col. 10, line 50).

Regarding claims 2 and 40, Yin teaches the step of determining a free bandwidth further comprises determining a maximum bandwidth at a port in the communication system (e.g., determining total available bandwidth B(i) for each class, see col. 6, lines 36-42, wherein the sum of all B(i) inherently yields the maximum bandwidth B); and subtracting at least a portion of the effective bandwidth (e.g., A(i)) for each class from the maximum bandwidth (e.g., see col. 5, lines 61-66 and step 60 of FIG. 3, wherein determining available resources inherently comprises subtracting assigned bandwidth A(i) from available bandwidth B(i)).

Regarding claims 3 and 41, Yin teaches the step of subtracting further comprises dividing the effective bandwidth (e.g., A(i)) for each class by its assigned overbooking factor (e.g., f(i)) to produce a result (e.g., B(i), see col. 7, lines 25-30 wherein upon f(i) and A(i) being known, B(i) is determined according to the equation B(i)=A(i)/f(i)); and subtracting the result from the maximum bandwidth (e.g., the combined results B(i) yield B, see Table 2 in col. 4 and Table 4 in col. 8, and thus, each B(i) inherently reduce the overall maximum bandwidth B by the amount of B(i)).

Regarding claims 4, 5, 42 and 43, Yin teaches the step of admitting or rejecting further comprises admitting the call if the free bandwidth is greater than zero and rejecting the call if the free bandwidth is less than zero (e.g., see col. 5, line 61 – col. 6, line 35 regarding accepting or rejecting based upon adequate resources being available, inherently corresponding to bandwidth, and wherein a value of zero is inherently used for determining admitting/rejecting situations involving full booked classes, see col. 7, lines 36).

Regarding claims 6 and 44, Yin teaches the plurality of service classes includes constant bit rates (e.g., Constant Bit Rate, see Table 1 in col. 3).

Regarding claims 7-9 and 45-47, Yin teaches the plurality of service classes includes a real time variable bit class and a non-real time variable bit class (e.g., real-time Variable Bit Rate and non-real-time Variable Bit Rate, see Table 1 in col. 3).

Regarding claims 10, 11, 48 and 49, Yin also teaches a default overbooking factor of 1 indicates no over-booking (e.g., see col. 7, lines 35-45).

Regarding claims 12 and 50, Yin teaches the communication system is an ATM network (e.g., see col. 12, lines 42-43).

Regarding claim 52, Yin teaches a plurality of access terminals may be chained whereby each access terminal performs the controlling call admission method independently of the other (e.g., see col. 5, lines 45-50 regarding the method being executed by more than one node or network device coupled in the system and each comprising a connection admission controller).

5. Claims 13 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yin in view of Gallant in view of Soumiya, further in view of U.S. Patent No. 6,608,815 to Huang et al.

Regarding claims 13 and 51, Yin in view of Gallant in view of Soumiya teaches the method discussed above regarding claims 1 and 39, however may not specifically disclose the system is an IP network.

Huang also teaches a method and apparatus for connection admission control, and further, teaches application for both ATM networks and IP networks (e.g., see col. 3, lines 36-50). The teachings of Huang provide improved connection admission control for a plurality of

applications including ATM, IP and MPLS architecture with minimum hardware implementation (e.g., see col. 3, lines 36-50). Thus, at the time of the invention it would have been obvious to apply the connection admission control teachings of Huang to the connection admission control method and apparatus of Yin in view of Gallant in view of Soumiya in order to provide improved connection admission control for a plurality of applications including ATM, IP and MPLS architecture with minimum hardware implementation (e.g., see col. 3, lines 36-50).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following prior art discloses determining an effective bandwidth based in part on a cell delay variation: U.S. Patent No. 6,865,150 to Perkins et al. (e.g., see col. 1, line 66 – col. 2, line 12); U.S. Patent No. 6,687,228 to Fichou et al. (e.g., see col. 1, lines 35-44); U.S. Patent No. 5,917,804 to Shah et al. (e.g., see col. 1, lines 37-47); and U.S. Patent No. 5,862,126 to Shah et al. (e.g., see col. 1, lines 37-47).

Additionally, the following prior art discloses determining an effective bandwidth based in part on a cell loss ratio: U.S. Patent No. 5,583,857 to Soumiya (e.g., see col. 11, lines 3-19); U.S. Patent No. 6,459,681 to Oliva (e.g., see col. 2, lines 1-45); U.S. Patent No. 6,865,150 to Perkins et al. (e.g., see col. 1, line 66 – col. 2, line 12); U.S. Patent No. 6,735,172 to Gibbs et al. (e.g., see col. 2, lines 23-34); U.S. Patent No. 6,215,768 to Kim (e.g., see col. 2, lines 18-28); U.S. Patent No. 6,028,840 to Worster (e.g., see col. 7, lines 12-51); U.S. Patent No. 5,917,804 to

Shah et al. (e.g., see col. 1, lines 37-47); and U.S. Patent No. 5,862,126 to Shah et al. (e.g., see col. 1, lines 37-47).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin M. Philpott whose telephone number is 571.272.3162. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571.272.3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin M. Philpott